

TABLE 3. Observations, Findings, and Associated Actions for Development of Fleet Surveillance Capability Using ESSENCE TMDS Data

| Observations and Findings | Associated Actions |
|---|--|
| Multiple records (rows) per encounter for multiple lab test results for same patient, resulting in inflated health encounter counts | Laboratory data for a single encounter were concatenated (“flattened”) into a single row |
| Three primary D&I fields could be used to develop queries | D&I field based on ICD-10-CM code was selected to develop queries, given high level of completeness and alignment with clinical details |
| Some ships (26%) used outdated ICD-9-CM codes for discharge diagnosis categorization | D&I field based on chief complaints was selected to develop queries for ships using ICD-9-CM codes |
| Intermittent data gaps for time series graphs of shipboard health care encounters complicated data interpretation | Time series graphs with all health care encounters were included in surveillance dashboards for review, in addition to specific syndromes, to enable monitoring of incoming data consistency |
| Lack of standard naming convention for text field containing ship name | Queries were developed to account for name variations |
| Inability to directly query data field containing ship name | ESSENCE query options were updated to enable direct free text queries of the field |
| Lack of general query that captured all respiratory illness, a necessity for small population surveillance | Built-in query was developed to capture a broad range of acute respiratory illnesses |
| More than 200 data fields possible for a single health care encounter, complicating record reviews | ESSENCE was updated so data fields were rearranged in order of epidemiological importance, and irrelevant fields were hidden |

Abbreviations: ESSENCE, Electronic Surveillance System for the Early Notification of Community-based Epidemics; TMDS, Theater Medical Data Store; D&I, disease and injury; ICD-10-CM, International Classification of Diseases, 10th Revision, Clinical Modification; ICD-9-CM, International Classification of Diseases, 9th Revision, Clinical Modification.